drawings. Corrected Figures 2, 5, 8 and 10 in which the changes have been indicated in red ink are attached for the Examiner's approval. Corresponding amendments have been made to the specification as well as some editorial corrections. As required by 37 C.F.R. s. 1.121, applicant has provided a separate version of the amended portions of the disclosure, showing the changes relative to the previous versions (attached). An abstract has also been added as required by the Examiner.

The Examiner rejected claims 9, 10 and 12 under 35 U.S.C. s. 112 as indefinite, rejected claims 1-7, 9 and 11 under 35 U.S.C. s. 102(b) as anticipated by McAlister United States Patent no. 5,462,513, rejected claims 1-7 and 9 under 35 U.S.C. s. 102(b) as anticipated by Knelson United States Patent no. 5,338,284, rejected claims 1-9 and 11-13 under 35 U.S.C. s. 103(a) as unpatentable over McAlister United States Patent no. 5,462,513 in view of Clarkson United States Patent no. 3,090,591, and rejected claims 1-9 and 12-13 under 35 U.S.C. s. 103(a) as unpatentable over Knelson United States Patent no. 5,338,284 in view of Clarkson United States Patent no.3,090,59-1. It is submitted that the new claims patentably distinguish the prior art.

The Examiner combined Clarkson United States Patent no. 3,090,591 with either McAlister or Knelson to find the originally filed claims obvious. Clarkson describes valves which are used in pipelines carrying fluids in which solids are suspended (column 1, line 24). One skilled in the art would not be motivated to apply such valves to the rotating environment of centrifugal concentrators. Extreme centrifugal forces are present in the environment of centrifugal concentrators which cause difficulties for elastomeric valves. Consequently it would not be obvious to one skilled in the art to apply an elastomeric valve of the type disclosed in Clarkson to a centrifugal concentrator. Further, modifications to the Clarkson-type valve are required for suitable operation, such as the pressure relief hole 130, and the air passageway 114 extending axially rather than perpendicularly. It is submitted therefore that the person skilled in the art would not be led without some invention to the presently claimed invention.

The United States Court of Appeals has recently provided direction as to the evidentiary basis required of an examiner in rejecting an application on obviousness grounds. See *In Re Sang Su Lee*, case No. 00-1158 (Serial No. 07/631,240, January 18,

2002). As stated in that decision, "When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. . . The factual inquiry whether to combine references must be thorough and searching. It must be based on objective evidence of record. . .A showing of a suggestion, teaching or motivation to combine the prior art references is an essential component of an obviousness holding. . . There must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant. . . Teachings can be combined only if there is some suggestion or incentive to do so. . . The Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious." In the present case the Examiner has stated that the teachings of Stoof "are reasonably pertinent to the particular problem of the Applicant's invention. . ." Due to the differences in environments as between pipelines and centrifugal concentrators, there would be no such motivation in the present case.

It is submitted therefore that the newly-submitted claims are allowable, and issuance of a Notice of Allowability is respectfully requested.

Respectfully submitted,

OFFICIAL

By: _____

Bruce M. Green
Registration No.: 30,524
Tel.: 604-669-3432
Fax : 604-681-4081

Vancouver, B.C.
CANADA

VERSION WITH MARKINGS TO SHOW CHANGES MADE

The paragraph beginning at page 4, line 19 is replaced with the following:

Fig. 6 is a cross-sectional view of the flow control valve shown in Fig. [3] 5 taken along lines [A-B] 6-6;

The paragraph beginning at page 4, line 21 is replaced with the following:

Fig. 7 is a cross-sectional view of the flow control valve shown in Fig. [3] 5 taken along lines B-B] 7-7;

The paragraph beginning at page 4, line 24 is replaced with the following:

Fig. 9 is a cross-sectional view of the valve sleeve shown in Fig. 8 taken along lines [C-C] 9-9;

The paragraph beginning at page 4, line 27 is replaced with the following:

Fig. 11 is a cross-sectional view of the valve muscle shown in Fig. 10 taken along lines [D-D] 11-11; and

The paragraph beginning at page 6, line 1 is relaced with the following:

Rotor 21 has an inner surface of rotor bowl 23 forming three zones: a migration zone, a retention zone and a lip zone, zones A, B and C respectively as described in U.S. Patent no. 4,824,431, which is incorporated herein by reference, which cause the denser, target particles from the slurry flow to be concentrated in the retention zone. The rotor 21 is mounted in the frame 3 by bearing assemblies 25. The rotor has a sheave 27 which is driven by a belt (not shown) driven by electric motor 9. The rotor is provided with hopper rings 35 and flow control valves 37, which will be described in further detail below. An impeller 28 is provided on the centre of the floor of bowl 23 which has three or four upstanding vanes to assist in the rotation of the slurry. A continuous 1/2 - inch slot 55 is formed in the surface of the retention zone B between the lower edge of the inner surface of lip 31 and the upper edge of the inner surface of lower bowl 30. Slot 55 opens to a series of mass-flow hoppers formed between two polyurethane hopper rings which hoppers in turn open to the flow control valves 37.

The paragraph beginning at page 7, line 10 is replaced with the following:

Flow control valves 37 are shown in detail in Fig. 3 through 11. They are generally "muscle valve", air controlled valves, modified versions of the type manufactured by The Clarkson Company. Each valve unit 37 consists of valve body 100, valve sleeve 102, valve muscle 104, end cap 106 and exit bushing 108. The valve body 100 is preferably cast from polyurethane plastic of hardness 75D and is relatively short in length to reduce particle acceleration in the valve. Each valve unit 37 has a central bore 110 formed in valve sleeve 102 which communicates with the hopper outlets. One end of

sleeve 102 forms an annular flange 103 which is held in a corresponding depression 105 in valve body 100. Metal ring 115 is sealed at its end to valve body 100[.] and metal ring 117 is sealed to end cap 106 to retain the valve muscle 104 on either side of its central thicker area 119. The valve muscle 104 is slightly pre-compressed to fit in chamber 116. O-ring 107 seals between end cap 106 and valve body 100, and O-ring 109 seals the entrance to compressed air passage 112. Bolts 113, 125 secure the valve assembly to the machine, and screws 111 fasten the valve body 100 to end cap 106.

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office on the date shown below.

Bruce M. Green Reg. No. 30,524
Name of Person Signing Certification

Dec 20/ 2002

OFFICIAL

FAX RECEIVED
DEC 23 2002
GROUP 1700

Approved
C. Cooley

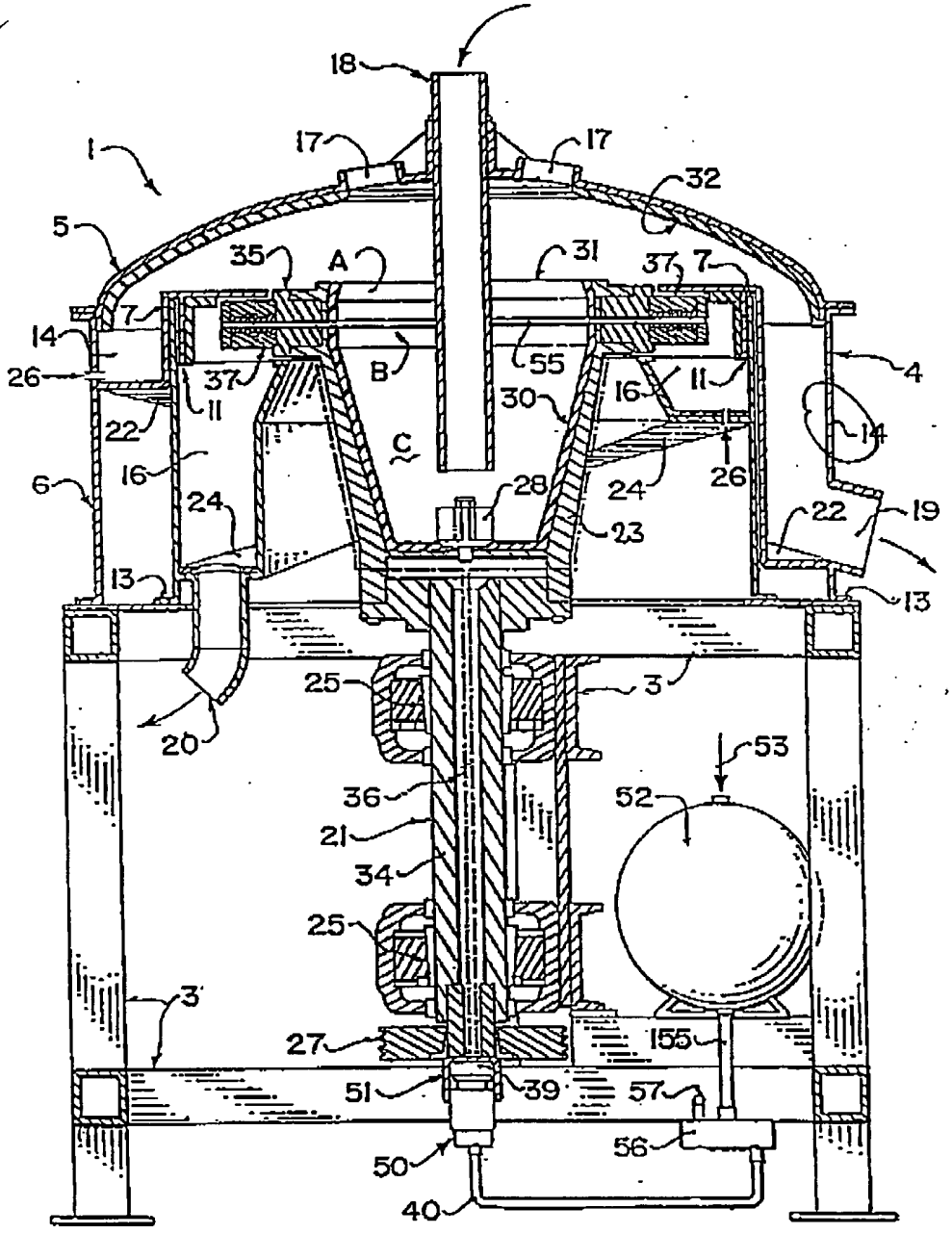

FIG. 2

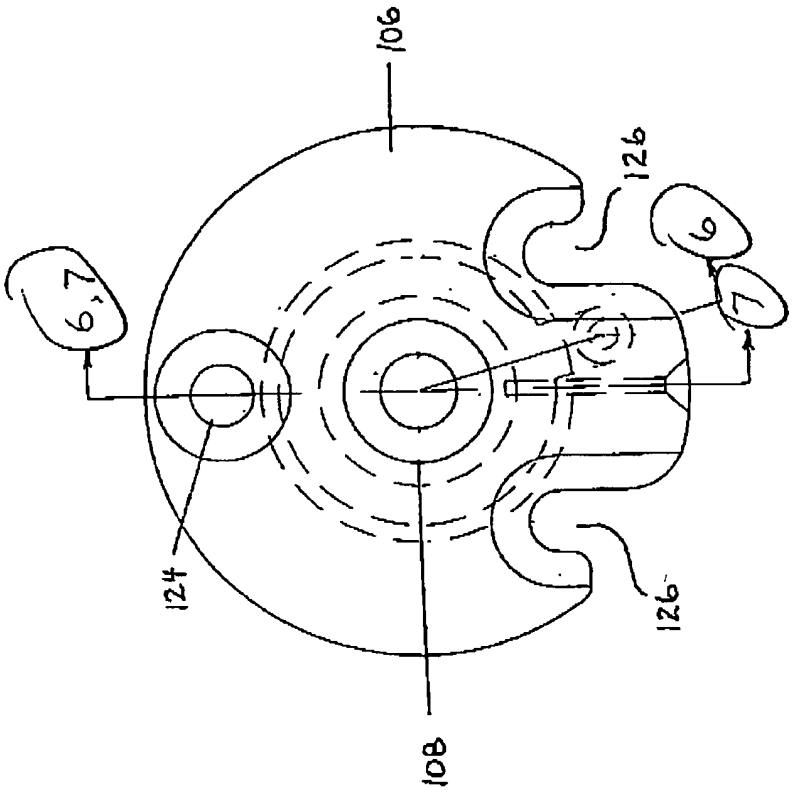

FIG.5

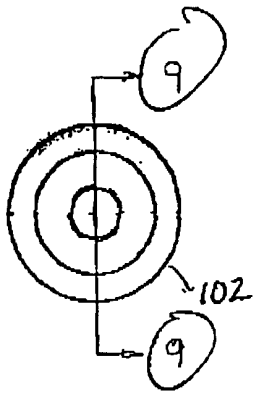

FIG.8

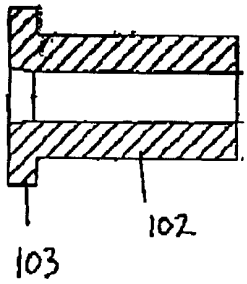

FIG.9

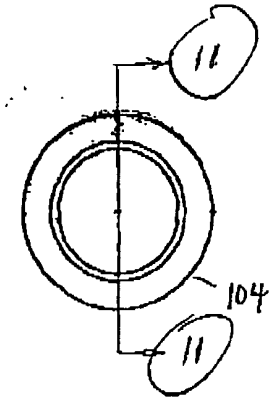

FIG.10

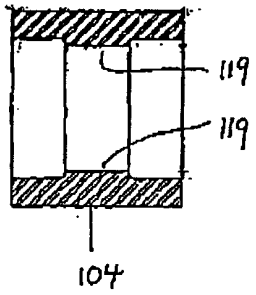

FIG.11